Annual Review of the Public Water System Supervision Program for the State of Mississippi

Fiscal Year 2020

October 1, 2019 - September 30, 2020

Report Date: June 30, 2021

Summary of State Drinking Water Program
Pursuant to 40 C.F.R. § 142.17, the U.S. Environmental Protection Agency Region 4 (EPA Region 4)

conducted an end-of-year evaluation of the fiscal year (FY) 2020 Public Water System Supervision (PWSS) program administered by the Mississippi State Department of Health (MSDH). In FY 2020, the MSDH regulated 1,177 active public water systems (PWSs) that collectively serve 3,149,764 customers. This water system inventory includes 1,031 community water systems (CWSs), 71 non-transient non-community water systems (NTNCWSs), and 75 transient non-community water systems (TNCWSs). Table 1 shows the EPA National Water Program Measures, targets, baseline data and the 2020 results for the EPA Region 4 and the State.

Table 1: EPA National Water Program Measures – Mississippi

EPA National Water Program Measures	What EPA Tracks	EPA National FY 2020 Target	Region 4 Baseline[1]	Region 4 FY 2020 Result[2]	State Baseline	State FY 2020 Result
B01. By September 30, 2022, reduce the number of CWSs out of compliance with health-based standards to 2,700. Baseline is 3,600 as of FY 2017.	Number of community water systems out of compliance with health-based standards	Reduce by 182	318	247	22	43
S04. By September 30, 2022, reduce the number of CWSs out of compliance due to health-based violations of the Lead and Copper Rule by 50 percent. Baseline is 308 as of FY 2017.	Number of community water systems out of compliance due to health-based violations of the Lead and Copper Rule (LCR)	Not Applicable	53	4	0	1
S01.1. By December 31, 2022, increase the percent of CWSs that have undergone a sanitary survey within the past three (3) years (five (5) years for outstanding performers or those ground water systems approved by the primacy agency to provide 4-log treatment of viruses) to 98.	Percent of drinking water sanitary surveys completed	93%	90.28%	89.1%	98.5%	92.9%

State Resources

[1] All baseline data is from 3rd Quarter 2017.
[2] All results data is from 3rd Quarter 2020 except S01.1, which is from 4th Quarter 2020.

The MSDH was awarded its FY 2020 PWSS allocation through a Direct Grant. The MSDH FY 2020 PWSS grant allocation was $1,165,000. The MSDH received $83,000 in PWSS Supplemental Grant funding for Per- and polyfluoroalkyl substances (PFAS) and emerging contaminants. The MSDH used their funding to sample near known PFAS sources.

The Mississippi Drinking Water State Revolving Fund (DWSRF) received $2,172,360 in set asides for FY 2020. Set asides included $237,060 for Small Systems Technical Assistance; $750,000 for State Program Management and $1,185,300 for Local Assistance.

Status of Rule Adoption/Primacy

The EPA Region 4's Drinking Water Program has been working to reduce the backlog of primacy applications under review, and reduction of this backlog is one of the national measures for the program. The MSDH has adopted regulatory authority for all required federal PWSS Program rules promulgated through FY 2020, and the EPA has formally approved primacy applications submitted by MSDH for each of these rules.

Effective October 7, 2019, the MSDH was designated as having final primacy for the Revised Total Coliform Rule (RTCR).

Table 2: Status of Rule Adoption/Primacy

Rule	Date of Rule Adoption by State	Primacy Application Status
Administrative Penalty Authority	4/1/2000	Approved 8/1/2001
New PWS Definition	4/1/2000	Approved 8/1/2001
Consumer Confidence Report Rule	4/1/2000	Approved 8/1/2001
Interim Enhanced Surface Water Treatment Rule	12/16/2000	Approved 5/1/2003
Stage 1 Disinfectants and Disinfection Byproducts Rule	12/16/2000	Approved 5/1/2003
Lead and Copper Rule Minor Revisions	10/10/2001	Approved 7/1/2002
Public Notification Rule	5/4/2002	Approved 5/1/2003
Radionuclides Rule	12/9/2004	Approved 2/16/2006
Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring Rule	12/9/2004	Approved 2/16/2006
Filter Backwash Recycling Rule	12/9/2004	Approved 2/16/2006
Long Term 1 Enhanced Surface Water Treatment Rule	7/24/2012	Approved 8/11/2014
Stage 2 Disinfectants and Disinfection Byproducts Rule	7/24/2012	Approved 8/11/2014
Long Term 2 Enhanced Surface Water Treatment Rule	7/24/2012	Approved 8/11/2014
Ground Water Rule	7/24/2012	Approved 8/11/2014

Lead and Copper Rule Short-Term Revisions and Clarifications	7/24/2012	Approved 8/11/2014
Revised Total Coliform Rule	2/25/2016	Approved 10/7/2019

Sanitary Surveys

Under 40 C.F.R. § 142.16, states must conduct sanitary surveys for CWSs no less frequently than every three (3) years, or five (5) years for outstanding performers. For NTNCWSs and TNCWSs, sanitary surveys must be conducted at least once every five (5) years.

Among CWSs, the MSDH exceeded the federal goal for completing sanitary surveys once every three (3) or five (5) years. As of September 30, 2020, sanitary surveys for 92.9 percent of CWSs were completed within their required schedule.

The MSDH's regional engineers are responsible for conducting sanitary surveys of PWSs in Mississippi. Under an approach more protective than federal requirements, all categories of PWSs are scheduled to have a sanitary survey completed every three (3) years. Regional engineers complete their assigned sanitary surveys according to the State's fiscal year schedule (July 1 to June 30). For CWSs and NTNCWSs, the MSDH uses a Capacity Assessment Rating (CAR) to evaluate the technical, managerial, and financial capacity of systems during sanitary surveys. The MSDH's CAR method is a transparent and efficient method to match systems with technical or financial assistance. The MSDH defines significant deficiencies in each of the eight (8) required sanitary survey components. The most identified significant deficiencies among Mississippi public water systems included: inadequate internal cleaning/maintenance of storage tanks, lack of redundant mechanical components where treatment is required and improperly constructed wells.

Enforcement

The EPA works closely with all eight (8) states to address non-compliant systems and reduce the number of priority systems. *The EPA Drinking Water Enforcement Response Policy (December 8, 2009)*[3] established six-months as the definition of "timely" standard for states to address with formal enforcement or return to compliance (RTC) systems that have an Enforcement Targeting Tool (ETT) score greater than or equal to 11 (priority systems). On a quarterly basis, the EPA evaluates the ETT and provides reports to the states. If needed, the EPA holds meetings with the State to discuss new systems on the ETT, challenges with addressing the ETT and any overall PWS enforcement program implementation issues.

One (1) of the EPA's six (6) FY 2020 – 2023 National Compliance Initiatives (NCIs) focuses on drinking water compliance. The goal of the drinking water NCI is to use a broad range of compliance assurance approaches with CWSs, ranging from technical assistance to formal enforcement, to promote greater compliance with the Safe Drinking Water Act (SDWA). The EPA will work with state primacy agencies to identify, prioritize, and address an agreed upon subset of CWSs with known, ongoing noncompliance with the SDWA. Additionally, the NCI will seek to identify and address risks at CWSs that may have gone unnoticed (e.g., noncompliance information is not reflected in the database of record). The NCI's specific goals include: (1) 25 percent reduction in the number of CWSs out of

[3] *Available at* https://www.epa.gov/enforcement/enforcement-response-policy-public-water-system-supervision-pwss-program-under-safe.

compliance with health-based standards, as per EPA's Strategic Plan; (2) 25 percent reduction in the number of CWSs in priority status (using the ETT) due to persistent noncompliance with monitoring and reporting requirements; (3) evaluate and address 50 percent of CWSs serving over 10,000 people to ensure compliance with NPDWRs.

The EPA's Office of Enforcement and Compliance Assurance, the Office of Water, Regional Enforcement and Compliance Assurance Divisions and Regional Water Divisions will work in cooperation with state primacy agencies to advance our common mission of ensuring public health protection. Consistent with the SDWA and the EPA policies, close communication and joint strategic planning with state primacy agencies will play a key role. Achieving meaningful progress will require ongoing coordination and collaboration between the EPA and the primacy agencies. The EPA and the state primacy agencies will confer and identify priorities for the EPA's involvement, roles and responsibilities and timelines for the SDWA compliance activities.

DWSRF Program Integration: Capacity Development and Small System Support

The MSDH uses its CAR program and SDWA compliance to identify water systems in need of capacity assistance. A MSDH regional engineer assesses the performance of each CWS and NTNCWS during the annual compliance inspection or sanitary survey. The rating is determined using Capacity Assessment Forms, which consists of technical, managerial, and financial questions designed to identify tasks that a system must routinely accomplish to demonstrate its capacity to comply with current and proposed SDWA requirements. The rating scale ranges from "0" (minimum) to "5.0" (maximum). Using DWSRF set-aside funding, the MSDH utilizes technical assistance contractors to provide free technical assistance to low-scoring systems and systems in long-term non-compliance. The MSDH provides technical assistance organizations an annual list of systems in need of assistance. The contractors provide periodic reports to the MSDH regarding the benefits of their assistance efforts.

Most of the CWSs (95 percent) in Mississippi are classified as small systems (service populations less than or equal to 10,000). Many of these systems benefit from assistance provided by the MSDH and its partner organizations. During FY 2020, activities undertaken in some of the assistance program areas are outlined below:

1. ***Comprehensive and Intermediate Technical Assistance.*** During FY 2020, the Mississippi State University – Extension Service (MSU-ES) provided comprehensive and intermediate assistance to 13 CWSs. Through a DWSRF-funded contract with the MSDH, the MSU-ES provides one-on-one assistance to PWSs to improve their capacity ratings. CWSs are strongly encouraged to utilize available assistance to increase their ratings. The MSDH ranks systems by their CAR and sends letters to the lowest performing systems. If a system refuses assistance, the MSDH may take future compliance actions. The CWS receives targeted and specialized assistance based on the specific system's needs. Often, many CWSs need to make policy and management adjustments, which can take several months or longer to complete.

2. ***Peer Review Program.*** During FY 2020, the Peer Review team assisted 10 CWSs. This voluntary program pairs a selected group of water system operators with other operators to assist them in preparing for annual MSDH inspections. The MSDH provides the MSU-ES a list of low-ranking systems. The MSU-ES sends a letter to the referred CWSs to determine their interest in participating in the Peer Review Program. If the system is interested, MSU-ES personnel coordinate a meeting with the Peer Review team and at least one system operator and a responsible

official. During the meeting, all components of the capacity assessment are performed. After the meeting, the Peer Review team gives the reviewed system a report, which outlines issues and suggestions for improvement. The Peer Review Program primarily emphasizes technical components while providing limited managerial and financial assistance.

3. ***Hands-On Operator Training.*** During the State's FY 2020, the Mississippi Rural Water Association (MsRWA) provided 16 "hands-on" operator training sessions to 496 attendees representing 332 unique PWSs. The MsRWA provides small system operators specialized "hands-on" training and skills, which enable them to effectively operate water systems. The training sessions, held throughout the State, provide participants with hands-on experience, such as meter and chlorinator repair, fire hydrant maintenance, leak detection, etc. The operators' newly acquired skills may lead to potential cost savings to the water systems since operators no longer have to outsource all repairs.

4. ***Board Management Training.*** During State FY 2020, the MSU-ES administered 9 Board Management Training sessions to 218 board members and managers representing 147 PWSs. State law requires newly elected board members of private, non-profit water systems and officials of municipal water systems with a population of 10,000 or fewer to receive training in their duties and responsibilities. The MSU-ES coordinates with other selected training partners to deliver this training throughout the State. In State FY 2021 the MSDH plans to deploy an online Board Management Training to reduce the number of untrained board members and PWS managers in State FY 2021.

5. ***Asset Management.*** In FY 2020, the MsRWA provided three (3) training courses for 92 attendees representing 45 PWSs. Because of the emphasis placed on asset management in America's Water Infrastructure Act, the MSDH is making asset management a key metric in in Mississippi's Capacity Development Program and strategy for FY 2021 and following years. The MSDH plans to use their Capacity Assessment program to encourage water systems that need to start or improve on asset management.

DWSRF Program Integration: Operator Certification

Mississippi's regulation governing the certification of operators of PWSs was promulgated under the authority of the Municipal and Domestic Water and Wastewater System Operator's Certification Act of 1986. This law made the certification for operator's mandatory after July 1, 1987. In Mississippi, certified operators are required for CWSs and NTNCWSs. The Bureau of Public Water Supply (the Bureau) of the MSDH issues and renews operator certificates. Water systems are classified according to specific criteria included in Mississippi's regulation. Operator qualifications are commensurate with the complexity of operating these systems.

In their Public Water Supply Annual Report submitted by the PWS, the owner or responsible official of the system designates the operator in responsible charge of the system. In 2019, certified operators were required at 1,040 CWSs and 70 NTNCWSs; however, 10 CWSs did not have a certified operator. If a system fails to hire a certified operator and/or provide their Public Water Supply Annual Report, the Bureau may issue an enforcement action to the water system.

The new Waterworks Operator Database is improving the certification and renewal process. Operators can track their training credits. Depending on experience, Mississippi operators are required to have up to 48 hours of continuing education in each 3-year certification period.

The State continues to meet the public health objectives and nine (9) baseline standards under the provisions to the 1996 SDWA Amendments. The most recent Operator Certification program annual submittal was approved on August 10, 2020 by the EPA.

Rule Implementation

The EPA's FY 2018–FY 2022 Strategic Plan[4] Goal 1, Objective 1.2, Strategic Measure (SM-2) is to reduce the number of CWSs out of compliance with health-based standards to 2,700 by September 30, 2022. The data source for the measure is the EPA's SDWIS Federal Data Warehouse, which contains compliance information about PWSs and their violations of the NPDWRs as reported to the EPA by the state primacy agencies. The baseline is the data that was available on October 1, 2017. At that time, the EPA Region 4 had 318 CWSs with health-based violations (HBVs); 23 CWSs were in Mississippi.

As of October 1, 2020, the EPA Region 4 had 247 CWSs with HBVs, and 46 of those CWSs were in Mississippi. The figures below show the number of CWSs with HBVs, the drinking water regulations violated, and the state-specific information. Figure 1 shows the number of CWSs with HBVs for each EPA Region 4 state. Figure 2 shows the number of CWSs with HBVs by Rule. Figure 3 shows the largest number of CWSs with HBVs in Mississippi was for the Ground Water Rule, followed by the Stage 2 Disinfectants and Disinfection Byproducts Rule.

Figure 1: CWSs with Health Based Violations – 3q2020

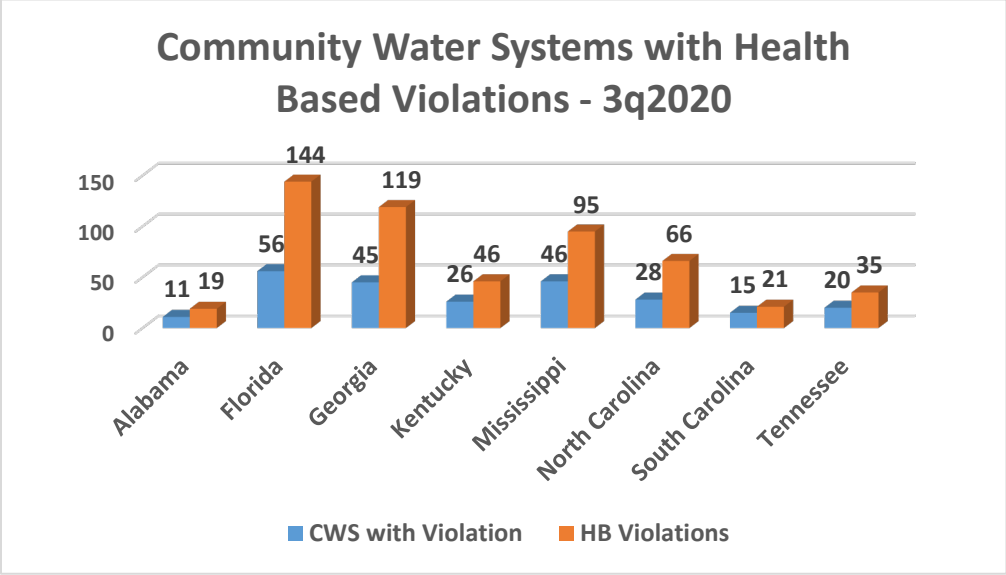
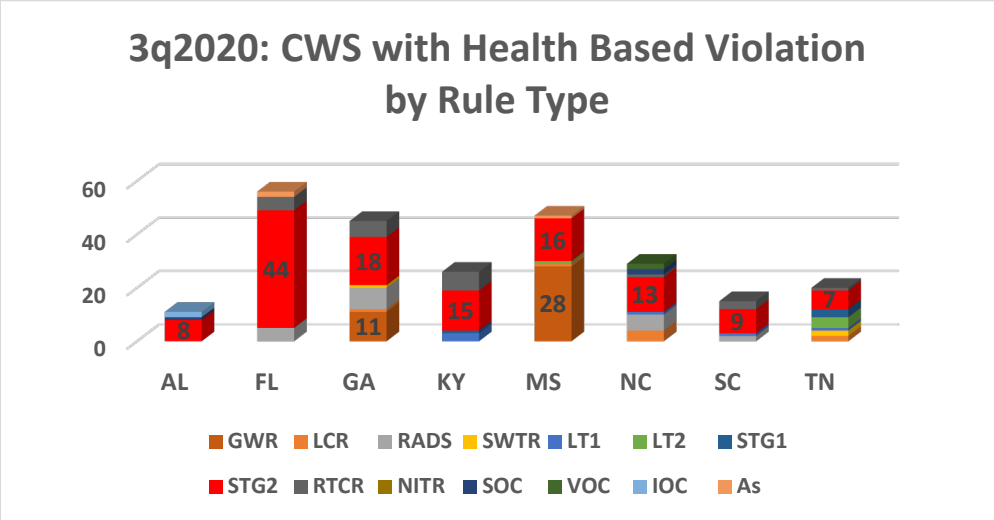


Figure 2[5]: CWSs with Health Based Violations by Rule Type - 3q2020

[4] Available at https://www.epa.gov/planandbudget/fy-2018-2022-epa-strategic-plan.

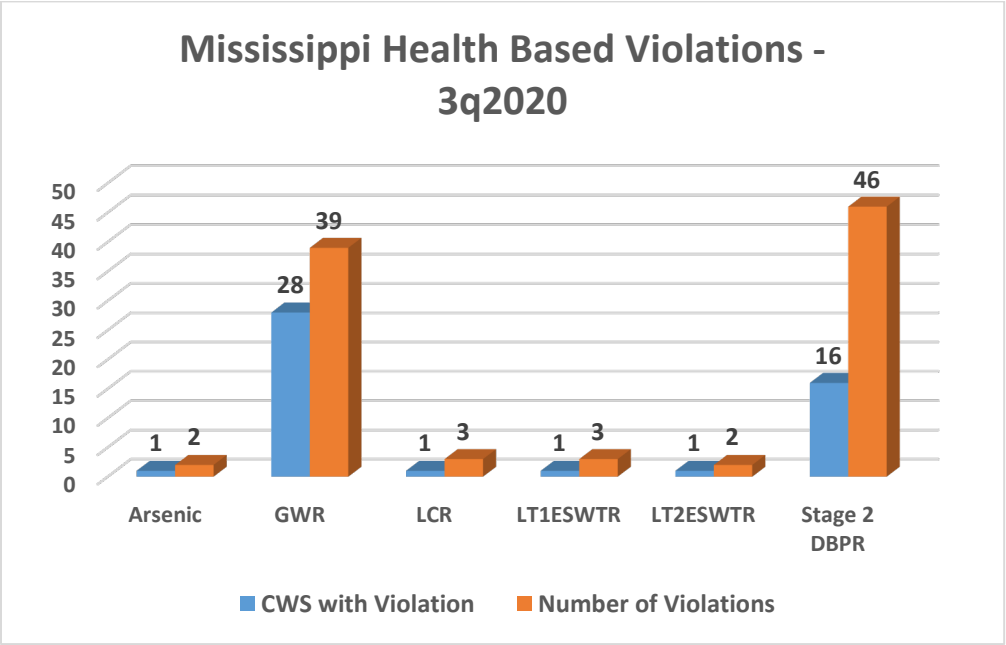
[5] Refer to Health–Based Violation Rule Abbreviation List on Page 13.



Health-Based Violations Rule Abbreviation List

As	Arsenic Rule
GWR	Ground Water Rule
IOC	Inorganic Chemical Rule
LCR	Lead and Copper Rule
LT1	Long-Term 1 Enhanced Surface Water Treatment Rule
LT2	Long-Term 2 Enhanced Surface Water Treatment Rule
NITR	Nitrate and Nitrite Rule
RADS	Radionuclides Rule
RTCR	Revised Total Coliform Rule
SOC	Synthetic Organic Contaminants Rule
STG1	Stage 1 Disinfectants and Disinfection Byproducts Rule
STG2	Stage 2 Disinfectants and Disinfection Byproducts Rule
SWTR	Surface Water Treatment Rule
VOC	Volatile Organic Contaminants

Figure 3: Mississippi Health Based Violations - 3q2020



Rule Implementation: Lead and Copper Rule (LCR)

The EPA Region 4 provides oversight for LCR implementation. Oversight activities include HBV analysis and discussion with states, technical assistance, primacy application review, and analysis of lead action level exceedances (ALEs). For this reporting cycle, the data analysis period was FY 2016 - FY 2020.

Figure 4 shows the number of CWSs with LCR HBVs in Mississippi over the last four (4) years. In October 2015, the EPA Region 4 states had 59 CWSs with LCR HBVs; zero (0) were in Mississippi. As of October 1, 2020, the EPA Region 4 had four (4) CWSs with LCR health-based violations (HBVs); one (1) of those CWSs was in Mississippi. In SDWIS/FED, 4 CWSs remain in the total number of LCR HBVs for FY 2020 Quarter 3 for the EPA Region 4 states but were removed from the total in this report because they have returned to compliance.

Figure 4[6]: Mississippi Lead and Copper Rule Health-Based Violations from FY 2016-FY 2020

[6] In the 1st Quarter of FY 2016, there were zero (0) CWSs with LCR HBVs. In the 3rd Quarter of FY 2020, there was one (1) system with an LCR HBV.

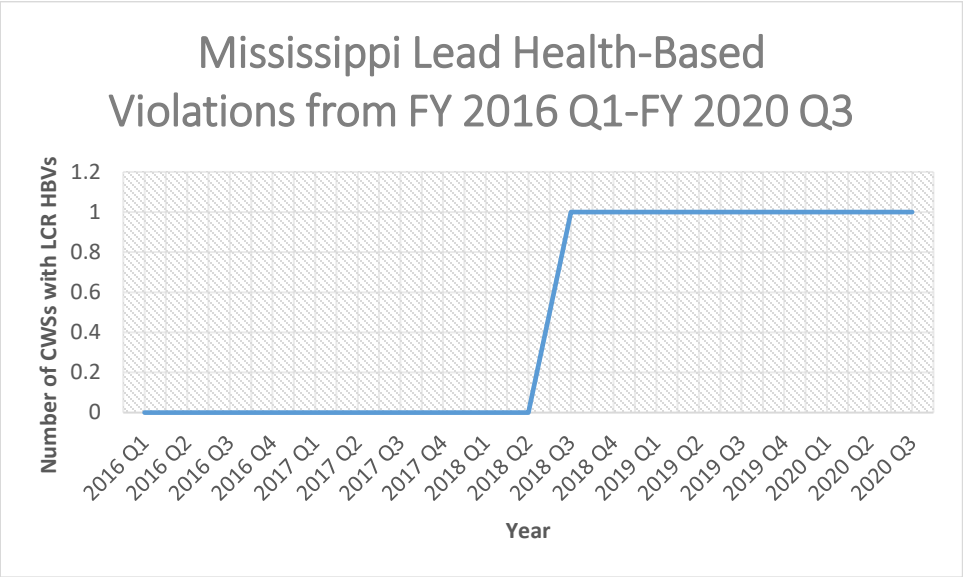
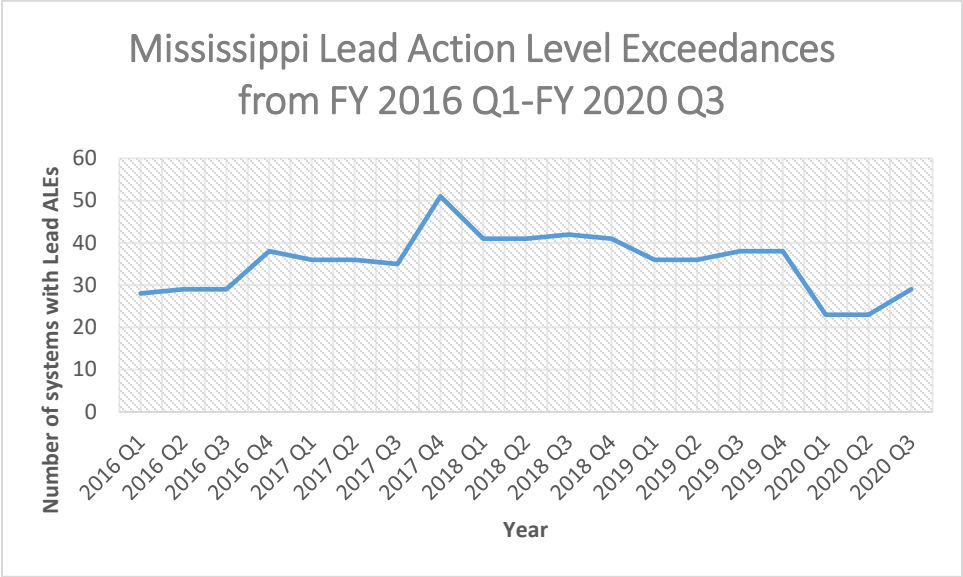


Figure 5 shows the number of systems with lead ALEs in Mississippi over the last four (4) years. In October 2015, the EPA Region 4 had 309 systems with LCR ALEs; 28 were in Mississippi. As of October 1, 2020, the EPA Region 4 states had 260 systems with lead ALEs; 29 of those systems were in Mississippi.

Figure 5[7]: Mississippi Lead Action Level Exceedances from FY 2016-FY 2020



The EPA Region 4 is planning additional oversight activities for FY 2021. The EPA Region 4 Lead and Copper Rule Team (R4 LCR Team) plans to create a workgroup dedicated to state engagement including technical discussions on rule requirements and implementation. The EPA Region 4 LCR Team

[7] In Mississippi in the 1st Quarter of FY 2016, there were 28 systems with lead ALEs. In the 3rd Quarter of FY 2020, there were 33 systems with lead ALEs.

will also assess state LCR implementation during the next round of state file reviews. Findings from state file reviews along with the analysis of regional and state level ALE trends will support efforts to identify best practices for LCR implementation in the EPA Region 4.

Rule Implementation: Public Notification (PN)

In 2019, the Office of Inspector General (OIG) issued a final report (No. 19-P-0318) recommending improvements to the EPA's oversight of PN Rule implementation. The OIG report found that some state primacy agencies did not consistently assign and report PN violations to SDWIS/FED when these violations occur. As a result, the EPA is taking a close look at each state primacy agency's approach to implementing the PN Rule, especially in situations where Tier 3 PN is required of water systems. The EPA Region 4's approach to assessing PN Rule implementation includes evaluating violation data reported to SDWIS/FED covering FY 2018 through FY 2020, as well as state responses to questions regarding public water system PN certifications, open violations, and violations that have returned to compliance during the 3-year period.

The PN Rule requires Tier 2 notifications be issued not later than 30 days after the system learns of the violation that triggers the PN requirement, and it requires Tier 3 notifications be issued not later than 12 months after the system learns of the violation that triggers the PN requirement. In its review of the 10 PN violations issued by the MSDH from FY 2018 through FY 2020, seven (7) violations were associated with water system failures to issue Tier 2 notifications within 30 days of incurring a Maximum Contaminant Level (MCL) violation under the Stage 2 Disinfection Byproduct Rule. The other three (3) PN violations were associated with water system failures to issue Tier 3 notification within 12 months of incurring monitoring and reporting violations under the RTCR. The three (3) PN violations reviewed appear to have not been assigned within appropriate timeframes following the 12-month compliance period for Tier 3 notification. The EPA Region 4 will continue to evaluate implementation of Tier 3 provisions of the PN Rule in Mississippi during its next round of file and annual program reviews and will use these reviews to clarify how SDWIS/STATE and other tools are being used to track PN. Mississippi should closely track PN compliance to avoid delayed notification.

Within MSDH's PWSS Program, compliance staff track PN requirements through SDWIS/STATE, as well as state generated spreadsheets. Each rule manager tracks compliance for multiple rules and issues violations using the compliance determination features in SDWIS/STATE. Additionally, SDWIS/STATE standard response tools are used to generate a report for tracking PN and the rule managers issue violations using EPA templates, which include return to compliance details. For CWSs, the MSDH allows the Tier 3 PNs to be reported annually in the Consumer Confidence Report (CCR), provided the CCR is mailed or directly delivered. The rule manager tracks the violation in SDWIS/STATE and ensures the correct PN language is included before the system may post or issue their CCR.

Under applicable federal regulations, once a public water system has issued PN to its customers, it is allowed 10 days to certify to the primacy agency that the PN has been appropriately completed. When MSDH assigns a PN violation, the public water system must provide PN certification as a follow-up action necessary for returning to compliance.

Mississippi has 1178 PWSs and reported 10 PN violations among 8 water systems during the 3-year period of evaluation. Currently, eight (8) of the 10 reported PN violations have returned to compliance and two (2) systems have PN violations that remain open, meaning that compliance has not been achieved.

Data Management and Reliability

State Data Management – Main Database and Data Transfer Software

The MSDH uses SDWIS/STATE to manage PWSS Program information and SDWIS/FedRep for reporting data to the EPA. The MSDH uses a version of SDWIS/STATE (version 3.33) which ensures reporting on all drinking water rules but needs to be upgraded to version 3.34 to assure that SDWIS/STATE works properly in MSDH's computing environment. The Drinking Water Program reported that the upgrades are in progress and that another product, SDWIS Bridge has been installed. It enables compliance determination and reporting associated with the more recent drinking water regulations such as the GWR and the RTCR.

Data Management and Reliability & Compliance Data Management

Operational responsibility for SDWIS/STATE resides in the MSDH Information Technology (IT) Department. The Drinking Water Program reported that the IT department became more flexible in allowing increased control for the Drinking Water Program to upgrade SDWIS/STATE. SDWIS/STATE maintenance and custom designed add-on report applications are done by an off-site contract employee, who is the SDWIS/STATE Administrator. The contractor also participates in EPA/Association of Safe Drinking Water Administrators data management workgroups and provides input to the ongoing SDWIS Modernization project on behalf of the MSDH.

The MSDH determines rule compliance using SDWIS/STATE's Compliance Decision Support module and internal spreadsheets for select rules. The MSDH's compliance officers are responsible for the data management and compliance determination work for all drinking water rules.

The MSDH receives sample data from the MSDH Public Health Laboratory (MPHL) and commercial laboratories by a combination of electronic data files or paper submissions. Paper submissions are manually entered into SDWIS/STATE and any electronic data flows are handled with the MSDH's customized SDWIS/STATE add-on applications. In Mississippi, the MPHL provides most laboratory analytical services and support to the MSDH Bureau and the PWSS monitoring and compliance program. Outside analytical laboratories handle a small portion of the drinking water analytical workload in the state.

Data Production to SDWIS/FED

The MSDH was on time with its data submissions to SDWIS/FED in FY 2020. Further analysis showed that the MSDH was on time with reporting valid violations to SDWIS/FED and that most sanitary surveys were recorded to SDWIS/FED in a timely manner.

Data Availability to Regulated Community and Public

The MSDH uses the Drinking Water Watch application for public web display of drinking water system information including sample analytical data, violations and enforcement information and other pertinent information about a water system.

Laboratory Certification

Pursuant to 40 C.F.R. § 142.10(b)(3)(i), the State is required to establish and maintain a state program for the certification of laboratories conducting analytical measurements of drinking water contaminants

pursuant to the requirements of the State primary drinking water regulations. To receive and retain primacy under the requirements of 40 C.F.R. § 142.10(b)(4), the State must have laboratory facilities available and capable of performing analytical measurements for all contaminants specified in the State Primary Drinking Water Regulations. The MSDH uses its Public Health Laboratory (MPHL) as the Principal State Laboratory and must be certified by the EPA.

Principal State Laboratory (PSL): The laboratory is ***Certified*** through August 29, 2022. The certification status of each area of responsibility is listed in Table 3, below.

Table 3: State Primacy Laboratory Certification Status

Primary Laboratory Name and Location	Laboratory Type	Certification Entity and Date of Most Recent On-site Audit				
		Chemistry	Microbiology	Radiochemistry	Asbestos	Dioxin
MPHL, Jackson, MS	State (PSL)	X	X	X		

Laboratory Certification Program: The program is deemed ***Effective*** through August 29, 2022. The number of contract laboratories assessed is listed in Table 4 and 5. The number of certification officers performing the audits and tracking drinking water proficiency tests (PTs) within the program is listed in Table 6.

Table 4: State Laboratory Certification Program

Number of Laboratories Certified for Drinking Water Analyses In-State and Out of State (*)				
Chemistry	Microbiology	Radiochemistry	Cryptosporidium	Asbestos
2	5	0	0	0

Table 5: Laboratories Certified through Reciprocity and Other Agreements by the State

Number of Laboratories Certified for Drinking Water Analyses In-State and Out of State (*)				
Chemistry	Microbiology	Radiochemistry	Cryptosporidium	Asbestos
11	4	0	0	3

Table 6: Number of State Certified Auditors

Area of Responsibility	Number of Auditors Certification Officers for the Areas of Responsibility
Chemistry	4

Microbiology	3
Radiochemistry	0
Cryptosporidium	0
Asbestos	0